

June 17, 2005

Alaska Department of Transportation & Public Facilities
4111 Aviation Drive
Anchorage, Alaska 99519

RECEIVED

JUL 05 2005

DEPT. OF ENVIRONMENTAL
CONSERVATION

Attn: Mr. Ron Stroman

Fax: (907) 269-0489

**RE: MAY 2005 GROUNDWATER MONITORING, FORMER MARKAIR FACILITY,
KING SALMON, ALASKA; ADEC DATABASE RECORD KEY NO.
1993250120601**

This letter report presents the results of our May 2005 groundwater sampling efforts at the former MarkAir Facility located in King Salmon, Alaska. As previously documented in our August 2004 *Additional Site Characterization, Former Mark Air Facility, King Salmon, Alaska*, report impacted soil and groundwater was encountered at the site. In addition, free product was observed in two of the onsite wells during previous monitoring events. The purpose of this effort was to document the levels of petroleum hydrocarbons in the groundwater at the site. Authorization to proceed with this project was received from Mr. Ron Stroman of the Alaska Department of Transportation and Public Facilities (ADOT&PF).

FIELD ACTIVITIES

The field activities consisted of collecting groundwater samples from four monitoring wells and measuring the thickness of free-phase product in two wells located on site. The approximate well locations are shown in Figure 1. The following sections describe the conducted field activities which were conducted on May 17 and 18, 2005.

Groundwater Sampling

Groundwater samples were collected from Monitoring Wells B1MW, B2MW, B3MW, and B6MW. Due to the presence of free petroleum product, groundwater samples were not collected from Monitoring Wells B4MW and B5MW. Prior to sampling the monitoring wells, the static water levels were obtained using an electronic water level indicator. With the exception of Well B1MW, groundwater sampling was conducted by purging the wells of a minimum of three well volumes of water using disposable bailers. Monitoring Well B1MW was purged dry after approximately one well volume. Water quality parameters, including pH, conductivity, and temperature were measured during the purging and sampling process. Following purging, groundwater samples were collected after allowing the wells to recover to within 80 percent of the pre-purging levels. The water sampling and purging data are included in

Table 1. The purgewater removed from the wells was placed in a labeled 30-gallon drum. The drum is currently stored on-site, inside the fenced area near the location of B3MW.

During the May 2005 sampling event, groundwater was measured at depths ranging from about 13.4 feet to 28.1 feet below the top of the well casings. Free product was encountered in Wells B4MW and B5MW at thicknesses of 0.61 feet and 3.12 feet, respectively. During the May 2005 sampling event, groundwater flow direction was generally to the north/northeast, based on depth to water measurements and a level loop survey that was conducted at the site in March 2004. The approximate groundwater flow direction measured in May 2005 is shown on Figure 1.

ANALYTICAL TESTING

Four groundwater samples were submitted to SGS Environmental Services (SGS) of Anchorage, Alaska, using chain-of-custody procedures. The groundwater samples were analyzed for diesel range organics (DRO) by Alaska Method AK 102 and aromatic volatile organics (BTEX) by Environmental Protection Agency (EPA) Method 8021B. For quality control purposes, a trip blank accompanied the samples and was analyzed for BTEX by EPA Method 8021B.

DISCUSSION OF RESULTS

The results of the groundwater testing are discussed below. The applicable groundwater cleanup levels are contained in the May 26, 2004 Oil and Other Hazardous Substances Pollution Control Regulations of 18 AAC 75. The groundwater cleanup levels are shown in Table 2.

Groundwater Samples

Petroleum hydrocarbons were detected in the four wells sampled. The DRO cleanup level of 1.5 parts per million (ppm) was exceeded in the samples collected from Wells B1MW and B2MW which contained 9.88 ppm and 61.0 ppm DRO, respectively. Samples B3MW and B6MW contained 0.836 ppm and 0.380 ppm DRO, respectively. The sample collected from Well B2MW contained 0.189 ppm benzene, which exceeds the cleanup level of 0.005 ppm. Ethylbenzene and xylenes were detected in Sample B2MW at concentrations below their respective cleanup levels. BTEX constituents were not detected in samples collected from the remaining wells. A summary of the current and cumulative groundwater sample results is shown in Tables 2 and 3, respectively. Included on Table 3 is a summary of samples collected from the on-site drinking water well. This well was not sampled during the current sampling event and was decommissioned in June 2005. The results of the well decommissioning project have been

provided to the Alaska Industrial Development and Export Authority (AIDEA) under separate cover.

Quality Control

A water trip blank accompanied the groundwater sample containers to and from the laboratory. BTEX concentrations were not detected, indicating that the groundwater samples were not cross contaminated or exposed to contamination from the sample handling and storage process. The quality control analytical sample results are summarized in Tables 2 and the laboratory reports are included in Attachment 1.

CONCLUSIONS/RECOMMENDATIONS

Groundwater impacted above the appropriate ADEC cleanup levels was encountered in two of the site's six wells, B1MW and B2MW. An increasing DRO concentration trend is noted for Well B2MW. The upgradient well, B6MW, has a decreasing DRO concentration trend. Free product was encountered in Wells B4MW and B5MW, and both have increased product thicknesses since monitoring began in March 2004. Based on the groundwater flow direction, impacted groundwater likely extends underneath the former Mark Air building and potentially offsite.

Per 18 AAC 75, Shannon & Wilson recommends that you submit a copy of this report to the ADEC for their review and comment.

CLOSURE/LIMITATIONS

This report was prepared for the exclusive use of our client and their representatives in the study of this site. The findings we have presented in this report are based on limited research and on the sampling and analyses that we conducted. They should not be construed as a definite conclusion regarding the site's groundwater quality. It is possible that our subsurface tests missed higher levels of petroleum hydrocarbon constituents and/or hazardous substances, although our intention was to sample areas likely to be impacted. As a result, the sampling and analyses performed can only provide you with our professional judgment as to the environmental characteristics of this site, and in no way guarantees that an agency or its staff will reach the same conclusions as Shannon & Wilson, Inc. The data presented in this report should be considered representative of the time of our site assessment. Changes in site conditions can occur over time, due to natural forces or human activity. In addition, changes in government codes, regulations, or laws may occur. Because of such changes beyond our control, our observations and interpretations for this site may need to be revised.

Former MarkAir Site, King Salmon, Alaska
June 17, 2005
Page 4

SHANNON & WILSON, INC.

Shannon and Wilson has prepared the information in Attachment 2, "Important Information About Your Geotechnical/Environmental Report," to assist you and others in understanding the use and limitations of our reports.

We appreciate this opportunity to be of service. Please call Stafford Glashan, P.E. or the undersigned at 907-561-2120 with questions or comments concerning the contents of this report.

Sincerely,

SHANNON & WILSON, INC.

Prepared by:

Handwritten signature of Darsen Gaughan, including the word "for:"

Darsen Gaughan
Environmental Engineer III

Reviewed by:

Handwritten signature of Dan P. McMahon

Dan P. McMahon
Sr. Environmental Scientist

Enc: Tables 1 through 3, Figure 1, and Attachments 1 & 2

32-1-16614-003

TABLE 1 - WELL SAMPLING LOG

WATER LEVEL MEASUREMENT DATA

Well Number	B1MW	B2MW	B3MW	B4MW	B5MW	B6MW
Date Water Level Measured	5/17/2005	5/17/2005	5/17/2005	5/17/2005	5/17/2005	5/17/2005
Time Water Level Measured	10:25	10:30	10:20	10:45	10:40	10:10
Surveyed MP Elevation (ft)	100.00	100.60	99.54	99.16	99.84	98.18
Measured Depth to Water (ft below MP)	20.82	28.12	13.39	17.24	18.63	11.97
Water Level Elevation (ft)	79.18	72.48	86.15	82.45*	83.94*	86.21

Note: Recent survey conducted by Shannon and Wilson in March 2004.

PURGING DATA

Well Number	B1MW	B2MW	B3MW	B4MW	B5MW	B6MW
Date Sampled	5/18/2005	5/17/2005	5/17/2005	5/17/2005	5/17/2005	5/17/2005
Time Sampled	8:30	15:15	13:45	NS	NS	15:45
Measured Depth to Water (ft below MP)	20.82	28.12	13.39	17.24	18.63	11.97
Total Depth of Well (ft below MP)	29.40	31.50	21.98	23.65	27.21	24.15
Water Column in Well (ft)	8.58	3.38	8.59	6.41	8.58	12.18
Gallons per Foot	0.16	0.16	0.16	0.16	0.16	0.16
Water Column Volume (gallons)	1.37	0.54	1.37	1.03	1.37	1.95
Total Volume Pumped/Bailed (gallons)	4.2	1.7	4.2	0.0	0.0	5.9
Purging/Sampling Method	Bailer	Bailer	Bailer	NS	NS	Bailer
Diameter of Well Casing	2-inch	2-inch	2-inch	2-inch	2-inch	2-inch
Remarks	Purged Dry	HC Odor		0.61' free product	3.12' free product	

WATER QUALITY DATA

WELL NUMBER	B1MW	B2MW	B3MW	B4MW	B5MW	B6MW
Temperature (°C)	7.7	9.4	5.5	-	-	5.5
Specific Conductance (mS/cm)	417	1,081	170	-	-	97.4
pH (Standard Units)	8.46	7.35	7.85	-	-	7.36

Note: Water quality parameters were measured with a Horiba U10 Meter

KEY	DESCRIPTION
°C	Degrees Celsius
ft	Feet
mS/cm	Millisiemens per centimeter
MP	Measuring Point
NS	Not Sampled
NTU	Nephelometric Turbidity Units
Mg/L	Milligrams per Liter
-	Not Measured/Not Applicable
*	Elevation Corrected for Product
HC	Hydrocarbon

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS

Parameter Tested	Method*	Cleanup Level (ppm)**	Sample ID Number^ and Water Depth in Feet (See Table 1, Figure 1, and Attachment 1)				
			B1MW 20.82	B2MW 28.12	B3MW 13.39	B6MW 11.97	Trip Blank
Diesel Range Organics (DRO) - ppm	AK 102	1.5	9.88	61.0	0.836	0.380	-
Aromatic Volatile Organics (BTEX)							
Benzene - ppm	EPA 8021B	0.005	<0.00500	0.189	<0.000500	<0.000500	<0.000500
Toluene - ppm	EPA 8021B	1.0	<0.0200	<0.0200	<0.00200	<0.00200	<0.00200
Ethylbenzene - ppm	EPA 8021B	0.7	<0.0200	0.0322	<0.00200	<0.00200	<0.00200
Xylenes - ppm	EPA 8021B	10.0	<0.0200	0.0246	<0.00200	<0.00200	<0.00200

KEY DESCRIPTION

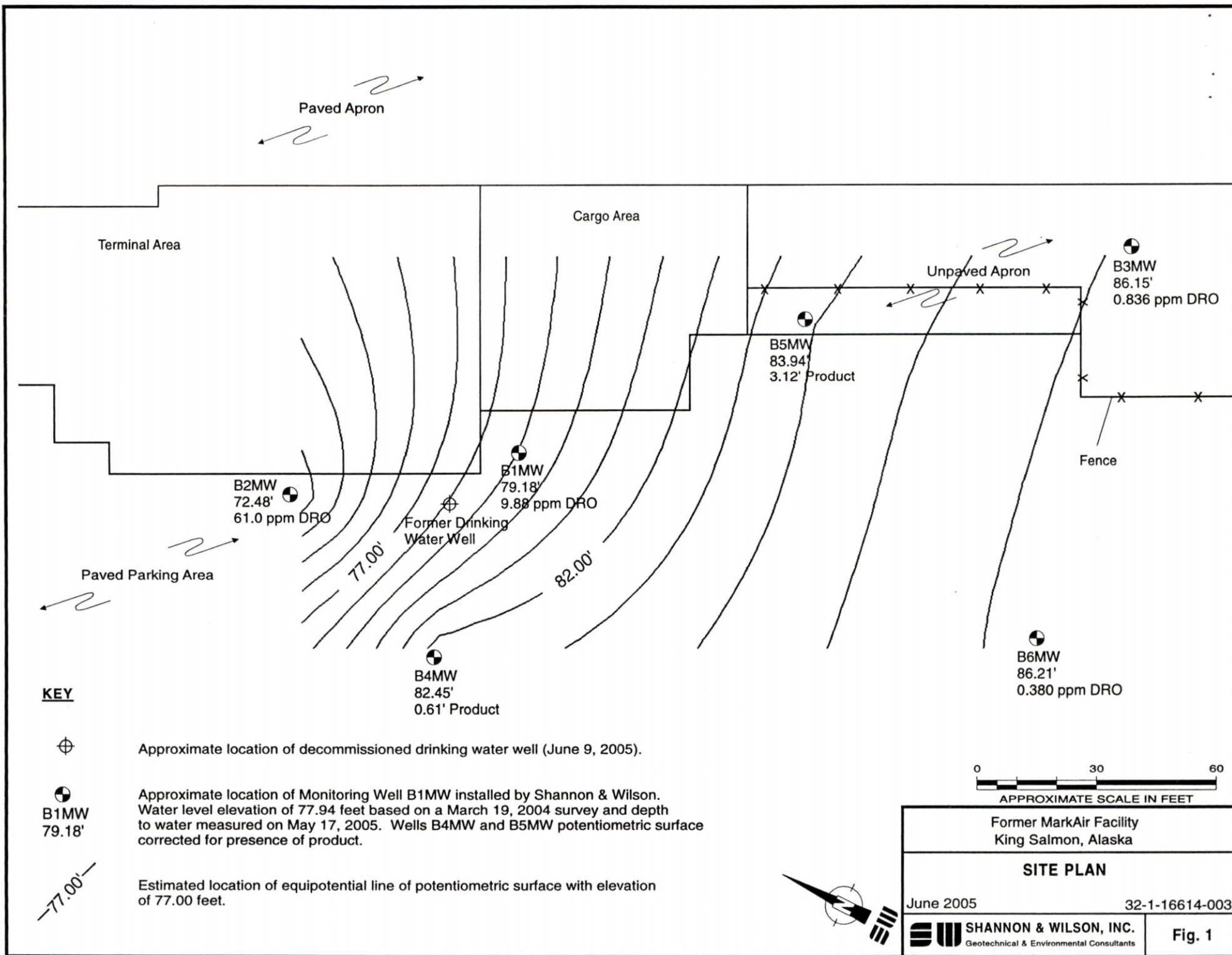
*	See Attachment 1 for compounds tested, methods, and laboratory reporting limits
**	Groundwater cleanup levels are listed in Table C, 18 AAC 75.345
^	Sample ID No. preceded by "16614-3-" on the chain of custody form
<0.00200	Analyte not detected; laboratory reporting limit of 0.00200 ppm
-	Not applicable or sample not tested for this analyte
ppm	Parts per million
9.88	Reported concentration exceeds the regulated cleanup level

TABLE 3 - CUMULATIVE SUMMARY OF ANALYTICAL RESULTS

Monitoring Well	Date	Depth to Water (ft)	Product Thickness (ft)	DRO ppm	Benzene ppm	Toluene ppm	Ethylbenzene ppm	Xylenes ppm
B1MW	3/17/2004	21.19	NP	9.85	0.00246	<0.00200	<0.00200	0.00331
	6/9/2004	22.06	NP	15.2	0.000748	<0.00200	<0.00200	<0.00200
	5/18/2005	20.82	NP	9.88	<0.00500	<0.0200	<0.0200	<0.0200
B2MW	3/19/2004	28.15	NP	19.9	0.155	<0.00200	0.00798	0.0111
	6/9/2004	28.34	NP	32.3	0.229	0.00205	0.0518	0.0860
	5/17/2005	28.12	NP	61.0	0.189	<0.0200	0.0322	0.0246
B3MW	3/19/2004	14.72	NP	1.02	<0.000500	<0.00200	<0.00200	<0.00200
	6/9/2004	14.81	NP	1.37	<0.000500	<0.00200	<0.00200	<0.00200
	5/17/2005	13.39	NP	0.836	<0.000500	<0.00200	<0.00200	<0.00200
B4MW	3/20/2004	17.03	0.02	-	-	-	-	-
	6/9/2004	12.52	0.24	-	-	-	-	-
	5/17/2005	17.24	0.61	-	-	-	-	-
B5MW	3/20/2004	16.96	0.15	-	-	-	-	-
	6/9/2004	19.25	2.12	-	-	-	-	-
	5/17/2005	18.63	3.12	-	-	-	-	-
B6MW	3/20/2004	14.03	NP	0.569	<0.000500	<0.00200	<0.00200	<0.00200
	6/9/2004	13.43	NP	0.471	<0.000500	<0.00200	<0.00200	<0.00200
	5/17/2005	11.97	NP	0.380	<0.000500	<0.00200	<0.00200	<0.00200
DW	6/28/2003	-	NP	0.529	<0.000500	<0.00200	<0.00200	<0.00200
	10/30/2003	-	NP	1.37	<0.000500	<0.00200	<0.00200	<0.00200
	3/20/2004	-	NP	1.76	-	-	-	-
	6/9/2004	-	NP	1.08	-	-	-	-

KEY	DESCRIPTION
-----	-------------

-	Not tested for this parameter
<0.0010	Reported analyte concentration less than laboratory reporting limit of 0.0010 ppm
9.85	Concentration exceeds the regulated cleanup level
ppm	Parts per million
DRO	Diesel Range Organics



Paved Apron

Terminal Area

Cargo Area

Unpaved Apron

Fence

Paved Parking Area

B2MW
72.48'
61.0 ppm DRO

Former Drinking
Water Well

B1MW
79.18'
9.88 ppm DRO

B5MW
83.94'
3.12' Product

B3MW
86.15'
0.836 ppm DRO

B4MW
82.45'
0.61' Product

B6MW
86.21'
0.380 ppm DRO

KEY



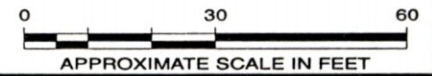
Approximate location of decommissioned drinking water well (June 9, 2005).



Approximate location of Monitoring Well B1MW installed by Shannon & Wilson. Water level elevation of 77.94 feet based on a March 19, 2004 survey and depth to water measured on May 17, 2005. Wells B4MW and B5MW potentiometric surface corrected for presence of product.

77.00'

Estimated location of equipotential line of potentiometric surface with elevation of 77.00 feet.



Former MarkAir Facility
King Salmon, Alaska

SITE PLAN

June 2005

32-1-16614-003

SHANNON & WILSON, INC.
Geotechnical & Environmental Consultants

Fig. 1

ATTACHMENT 1
RESULTS OF ANALYTICAL TESTING BY
SGS ENVIRONMENTAL SERVICE INC. OF
ANCHORAGE, ALASKA



Laboratory Analysis Report

200 W. Potter Drive
Anchorage, AK 99518-1605
Tel: (907) 562-2343
Fax: (907) 561-5301
Web: <http://www.us.sgs.com>

Darsen Gaughan
Shannon & Wilson Inc.
5430 Fairbanks St Ste 3
Anchorage, AK 99518

Work Order: 1052789
32-1-16614-3 Fmr Mark Air KS
Client: Shannon & Wilson Inc.
Report Date: May 31, 2005

Released by:
Shane Poston
Digitally signed by Shane Poston
DN: CN = Shane Poston, C = US,
OU = SGS Anchorage, AK
Date: 2005.05.31 15:08:10 -08'00'

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Control Manual that outlines this program is available at your request. The laboratory ADEC certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS Quality Assurance Program Plan and the National Environmental Laboratory Accreditation Conference.

If you have any questions regarding this report or if we can be of any other assistance, please call your SGS Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

- PQL Practical Quantitation Limit (reporting limit).
- U Indicates the analyte was analyzed for but not detected.
- F Indicates an estimated value that falls below PQL, but is greater than the MDL.
- J The quantitation is an estimation.
- B Indicates the analyte is found in a blank associated with the sample.
- * The analyte has exceeded allowable regulatory or control limits.
- GT Greater Than
- D The analyte concentration is the result of a dilution.
- LT Less Than
- ! Surrogate out of control limits.
- Q QC parameter out of acceptance range.
- M A matrix effect was present.
- JL The analyte was positively identified, but the quantitation is a low estimation.
- E The analyte result is high outside of calibrated range.

Note: Soil samples are reported on a dry weight basis unless otherwise specified.



SGS Ref.# 1052789001
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16614-3 Fmr Mark Air KS
Client Sample ID 16614-3-B1MW
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time
Printed Date/Time 05/31/2005 15:04
Collected Date/Time 05/18/2005 8:30
Received Date/Time 05/18/2005 16:36
Technical Director Stephen C. Ede

Sample Remarks:

DRO/RRO - LCS/LCSD spike and surrogate recoveries are outside control limits. Sample re-extracted past hold time.
DRO - The pattern is consistent with a weathered middle distillate.
BTEX - Sample cannot be reanalyzed at a lower dilution due to foaming while being purged.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Fuels Department</u>									
Benzene	5.00 U	5.00	ug/L	SW8021B	B		05/25/05	05/25/05	MML
Toluene	20.0 U	20.0	ug/L	SW8021B	B		05/25/05	05/25/05	MML
Ethylbenzene	20.0 U	20.0	ug/L	SW8021B	B		05/25/05	05/25/05	MML
P & M -Xylene	20.0 U	20.0	ug/L	SW8021B	B		05/25/05	05/25/05	MML
o-Xylene	20.0 U	20.0	ug/L	SW8021B	B		05/25/05	05/25/05	MML
Surrogates									
1,4-Difluorobenzene <surr>	96.6		%	SW8021B	B	74-120	05/25/05	05/25/05	MML
<u>Semivolatile Organic Fuels Department</u>									
Diesel Range Organics	7.50	0.319	mg/L	AK102	D		05/19/05	05/23/05	JC
Diesel Range Organics	9.88	0.313	mg/L	AK102	E		05/25/05	05/25/05	JC
Surrogates									
5a Androstane <surr>	114		%	AK102	D	50-150	05/19/05	05/23/05	JC
5a Androstane <surr>	102		%	AK102	E	50-150	05/25/05	05/25/05	JC



SGS Ref.# 1052789002
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16614-3 Fmr Mark Air KS
Client Sample ID 16614-3-B2MW
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time
Printed Date/Time 05/31/2005 15:04
Collected Date/Time 05/17/2005 15:15
Received Date/Time 05/18/2005 16:36
Technical Director Stephen C. Ede

Sample Remarks:

DRO - The pattern is consistent with a weathered middle distillate.
BTEX - Sample cannot be reanalyzed at a lower dilution due to foaming while being purged.
DRO/RRO - LCS/LCSD spike and surrogate recoveries are outside control limits. Sample re-extracted past hold time.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Fuels Department</u>									
Benzene	189	5.00	ug/L	SW8021B	B		05/25/05	05/25/05	MML
Toluene	20.0 U	20.0	ug/L	SW8021B	B		05/25/05	05/25/05	MML
Ethylbenzene	32.2	20.0	ug/L	SW8021B	B		05/25/05	05/25/05	MML
P & M -Xylene	24.6	20.0	ug/L	SW8021B	B		05/25/05	05/25/05	MML
o-Xylene	20.0 U	20.0	ug/L	SW8021B	B		05/25/05	05/25/05	MML
Surrogates									
1,4-Difluorobenzene <surr>	91.8		%	SW8021B	B	74-120	05/25/05	05/25/05	MML
<u>Semivolatile Organic Fuels Department</u>									
Diesel Range Organics	46.3	1.26	mg/L	AK102	D		05/19/05	05/24/05	JC
Diesel Range Organics	61.0	3.00	mg/L	AK102	E		05/25/05	05/27/05	JC
Surrogates									
5a Androstane <surr>	107		%	AK102	D	50-150	05/19/05	05/24/05	JC
5a Androstane <surr>	71.7		%	AK102	E	50-150	05/25/05	05/27/05	JC



SGS Ref.# 1052789003
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16614-3 Fmr Mark Air KS
Client Sample ID 16614-3-B3MW
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time
Printed Date/Time 05/31/2005 15:04
Collected Date/Time 05/17/2005 13:45
Received Date/Time 05/18/2005 16:36
Technical Director Stephen C. Ede

Sample Remarks:

DRO/RRO - LCS/LCSD spike and surrogate recoveries are outside control limits. Sample re-extracted past hold time.
DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Fuels Department</u>									
Benzene	0.500 U	0.500	ug/L	SW8021B	A		05/23/05	05/24/05	MML
Toluene	2.00 U	2.00	ug/L	SW8021B	A		05/23/05	05/24/05	MML
Ethylbenzene	2.00 U	2.00	ug/L	SW8021B	A		05/23/05	05/24/05	MML
P & M -Xylene	2.00 U	2.00	ug/L	SW8021B	A		05/23/05	05/24/05	MML
o-Xylene	2.00 U	2.00	ug/L	SW8021B	A		05/23/05	05/24/05	MML
<u>Surrogates</u>									
1,4-Difluorobenzene <surr>	96.3		%	SW8021B	A	74-120	05/23/05	05/24/05	MML
<u>Semivolatile Organic Fuels Department</u>									
Diesel Range Organics	0.831	0.316	mg/L	AK102	D		05/19/05	05/23/05	JC
Diesel Range Organics	0.836	0.313	mg/L	AK102	E		05/25/05	05/25/05	JC
<u>Surrogates</u>									
5a Androstane <surr>	132		%	AK102	D	50-150	05/19/05	05/23/05	JC
5a Androstane <surr>	137		%	AK102	E	50-150	05/25/05	05/25/05	JC



SGS Ref.# 1052789004
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16614-3 Fmr Mark Air KS
Client Sample ID 16614-3-B6MW
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time
Printed Date/Time 05/31/2005 15:04
Collected Date/Time 05/17/2005 15:45
Received Date/Time 05/18/2005 16:36
Technical Director Stephen C. Ede

Sample Remarks:

DRO/RRO - LCS/LCSD spike and surrogate recoveries are outside control limits. Sample re-extracted past hold time.
DRO - The pattern is consistent with a weathered middle distillate.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Fuels Department</u>									
Benzene	0.500 U	0.500	ug/L	SW8021B	A		05/23/05	05/24/05	MML
Toluene	2.00 U	2.00	ug/L	SW8021B	A		05/23/05	05/24/05	MML
Ethylbenzene	2.00 U	2.00	ug/L	SW8021B	A		05/23/05	05/24/05	MML
P & M -Xylene	2.00 U	2.00	ug/L	SW8021B	A		05/23/05	05/24/05	MML
o-Xylene	2.00 U	2.00	ug/L	SW8021B	A		05/23/05	05/24/05	MML
<u>Surrogates</u>									
1,4-Difluorobenzene <surr>	96.2		%	SW8021B	A	74-120	05/23/05	05/24/05	MML
<u>Semivolatile Organic Fuels Department</u>									
Diesel Range Organics	0.380	0.316	mg/L	AK102	D		05/19/05	05/23/05	JC
Diesel Range Organics	0.326 U	0.326	mg/L	AK102	E		05/25/05	05/25/05	JC
<u>Surrogates</u>									
5a Androstane <surr>	91.4		%	AK102	D	50-150	05/19/05	05/23/05	JC
5a Androstane <surr>	68.6		%	AK102	E	50-150	05/25/05	05/25/05	JC



SGS Ref.# 1052789005
Client Name Shannon & Wilson Inc.
Project Name/# 32-1-16614-3 Fmr Mark Air KS
Client Sample ID Trip Blank
Matrix Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time
Printed Date/Time 05/31/2005 15:04
Collected Date/Time 05/17/2005 13:45
Received Date/Time 05/18/2005 16:36
Technical Director Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
<u>Volatile Fuels Department</u>									
Benzene	0.500 U	0.500	ug/L	SW8021B	A		05/23/05	05/24/05	MML
Toluene	2.00 U	2.00	ug/L	SW8021B	A		05/23/05	05/24/05	MML
Ethylbenzene	2.00 U	2.00	ug/L	SW8021B	A		05/23/05	05/24/05	MML
P & M -Xylene	2.00 U	2.00	ug/L	SW8021B	A		05/23/05	05/24/05	MML
o-Xylene	2.00 U	2.00	ug/L	SW8021B	A		05/23/05	05/24/05	MML
Surrogates									
1,4-Difluorobenzene <surr>	93.5		%	SW8021B	A	74-120	05/23/05	05/24/05	MML

1052789



SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

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1200 17th Street, Suite 1024
Denver, Co 80202
(303) 825-3800

CHAIN-OF-CUSTODY RECORD

Laboratory: SGS Page 1 of 1
Attn: Shane

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	Analysis Parameters/Sample Container Description (include preservative if used)			Total Number of Containers	Remarks/Matrix
16614-3-B1MW	① A-E	830	5-18	X	X	X			5	Water
" -B2MW	②	1515	5-17	X	X	X			5	"
" -B3MW	③	1345	5-17	X	X	X			5	"
" -B6MW	④	1545	5-17	X	X	X			5	"
Trip Blank	⑤ A-C	-	5-18	-	X				3	"

Project Information	Sample Receipt
Project Number: <u>321-16614-3</u>	Total Number of Containers
Project Name: <u>Env. Monitor</u>	COC Seals/Intact? Y/N/NA
Contact: <u>Dan Gaughan</u>	Received Good Cond./Cold <u>TS=6.1</u>
Ongoing Project? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Delivery Method: <u>e-5.4</u>
Sampler: <u>OR 6</u>	(attach shipping bill, if any)

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>Dan Gaughan</u> Time: <u>1635</u>	Signature: _____ Time: _____	Signature: _____ Time: _____
Printed Name: <u>Dan Gaughan</u> Date: <u>5-18-05</u>	Printed Name: _____ Date: _____	Printed Name: _____ Date: _____
Company: <u>STW</u>	Company: _____	Company: _____

Instructions
Requested Turnaround Time: <u>Standard</u>
Special Instructions:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: _____ Time: _____	Signature: _____ Time: _____	Signature: <u>[Signature]</u> Time: <u>1636</u>
Printed Name: _____ Date: _____	Printed Name: _____ Date: _____	Printed Name: <u>Janey Johnson</u> Date: <u>5-18-05</u>
Company: _____	Company: _____	Company: <u>SGS</u>

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

ATTACHMENT 2

IMPORTANT INFORMATION ABOUT YOUR

GEOTECHNICAL/ENVIRONMENTAL REPORT

Important Information About Your Geotechnical/Environmental Report

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland